

RUDNEV, G.V.

Conference of agricultural meteorologists. Meteor. i gidrol. no.1:
68-69 Ja '61. (MIRA 14:1)

(Meteorology, Agricultural--Congresses)

RUDNEV, German Viktorovich; YAKOVLEV, N.N., otv.red.; MIRONENKO, Z.I.,
red.; SERGEYEV, A.N., tekhn.red.

[Weather and crops] Pogoda i posevy. Leningrad, Gidrometeor.
izd-vo, 1960. 74 p. (MIRA 13:8)
(Crops and climate)

27403

S/089/61/011/003/004/013

B102/B138

11.3900

AUTHORS: Rudnev, I. I., Lyashenko, V. S. (Deceased), Abramovich, M. D.

TITLE: Thermal diffusivity of sodium and lithium

PERIODICAL: Atomnaya energiya, v. 11, no. 5, 1961, 230-232

TEXT: The authors describe the design of a device for measuring the thermal diffusivity of solid and liquid metals at temperatures of up to 1,000°C by Ångström's method using temperature waves. The theory of this method may be found, e.g., in Zh. tekhn. fiz. 8, no. 10, 935 (1938). The measuring arrangement is shown in Fig. 1. The metals were in vacuum

poured ($\sim 1 \cdot 10^{-2}$ mm Hg) into a thin-walled tube made of 1X1849T (1Kh18N9T) steel. The sodium has been distilled, and the lithium filtered through a 1.5 mm capillary. The specimen was then put into a vertical, electrically heated tube, in which a reasonably uniform temperature field of up to 1,000°C could be heated. Chromel-alumel thermocouples serve for measuring the temperature. The constant thermo-emf component of the thermocouples was measured by a potentiometer, the variable component being recorded on a ЭНН-09 (EPP-09) potentiometer. These measurements were followed by

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Thermal diffusivity of sodium ...

27-23

S/089/61/011/003/004/013

B102/B138

exact quantitative determination of the impurities contained in Li and Na. The method of thermal diffusivity determination is based on the following:

specimen-plus-furnace are in a vacuum $\sim 10^{-4}$ mm Hg; the specimen is heated by regular heat pulses, and after about 2-3 hr. when a steady state is established, consecutive time/temperature variation curves are taken on the EPP-09 at two points on the specimen. The distance between these thermocouples is measured for this purpose. The recordings are repeated six times for each temperature and then submitted to harmonic analysis. Both the amplitudes of the first harmonic and the phase shift are determined for each pair of thermocouples. Thus, one obtains a picture of the heat wave propagation through the metal. The thermal diffusivity is determined by

the formula $a^* = \frac{\pi L^2}{\tau (\alpha_1 - \beta_1) \ln(A_1/B_1)}$, where L denotes the distance

between the thermocouples, τ is the period principle harmonic of the temperature wave, α_1 and β_1 are the phases of the first harmonic at the thermocouple junctions, and A_1 and B_1 are the corresponding amplitudes.

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S/089/61/011/003/004/013

B102/B138

Thermal diffusivity of sodium ...

This formula holds for the metal-filled steel tube. The true inside thermal diffusivity of the metal is obtained after correction for the steel casing: $a = a^*(1+\Delta)$. The correction Δ may be determined using the

formula $\Delta = \frac{\kappa_1 S_1 C_1}{\kappa_2 S_2 C_2} \left(1 - \frac{a_1}{a}\right)$, where the quantities C , κ , and S denote

heat capacity, density, and cross-section area of the steel casing (subscript 1) and of the metal under investigation (subscript 2). The distance L has to be corrected for thermal expansion. The following results were obtained: Na, 24 points of measurement between 350 and 876°C:

$a_{Na} = 0.721 - 0.0174 \cdot 10^{-2} T \text{ cm}^2/\text{sec}$; Li, 54 points of measurement between

345 and 1007°C: $a_{Li} = 0.128 + 0.02844 \cdot 10^{-2} T - 0.000041 \cdot 10^{-4} T^2 \text{ cm}^2/\text{sec}$.

The maximum relative error $\Delta a/a$ was found to be ~10%. Using these results, the heat conduction coefficients were calculated as follows:

$\lambda_{Na} = 0.224 - 0.0159 \cdot 10^{-2} T + 0.00058 \cdot 10^{-4} T^2 \text{ cal/cm.sec.deg}$;

$\lambda_{Li} = 0.072 + 0.01271 \cdot 10^{-2} T - 0.00039 \cdot 10^{-4} T^2 \text{ cal/cm.sec.deg}$. There are

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S/089/61/011/003/004/013
B102/B138

Thermal diffusivity of sodium ...

1 figure, 1 table, and 8 references: 7 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows:
T. Douglas et al. J. Amer. Chem. Soc., 77, no. 8, 2144 (1955).

SUBMITTED: February 1, 1961

Legend to the figure: (1) Specimen, (2) pulsed heater, (3) thermocouples, (4) electric furnace, (5) vacuum container, (6) bearing plate, (7) interrupter, (8) ammeter, (9) voltage stabilizer, (10) thermocouple change over switch, (11) potentiometer, (12) recording vacuum-tube voltmeter EPP-09.

Card 4/5

RUENOV, van Malayonol; RUENOV, I.M., 1964.

[Diagnosis and treatment of rheumatic fever in children]

Diagnostika i lechenie revmatizma u detei. Kiev, 1964.

117 p.

(USSR 18.2)

EXCERPTA MEDICA Soc 7 Vol.12/6 Pediatrics June 58

1704. PATHOGENESIS AND TREATMENT OF RHEUMATISM IN CHILDREN (Russian text) - Rudnev I. M. - TRUD. II SEZDA VRAC. - PEDIAT. USSR 1956, (250-255)

A number of facts support the infectious-neurogenic theory of the aetiology of rheumatism. Changes in the connective tissues in rheumatism are secondary phenomena and derive from disturbances in the regulating centres. The next link in development of rheumatism is the involvement of endocrine glands (especially the hypophysis and adrenals) as well as environmental factors. Disturbance in the thermoregulatory centres is a strong pathogenetic factor. Ambulatory cases result from the reduced sensitizing properties of bacteria, following the use of antibiotics and chemotherapeutic media in tonsillar and other infections. Essentials in treatment are: establishment of a therapeutic and protective regime in accordance with the phase of the disease, and use of desensitizing drugs (salicylates and pyrimidon), UV irradiation, autohaemotherapy, blood transfusion and ACTH. In protracted chronic relapsing forms, ACTH has as little effect as salicylates. Butadion (phenylbutazone) is a new drug now in use. A unified planning of prophylactic measures in the out-patient clinic, sanatorium, home and school would be a great achievement. Planning of proper daily routine, graduated exercises for the cardiovascular system, hardening of the child and treatment of chronic foci of infection, come under the tasks of the out-patient clinic.

(S)

RUDNEV, I.M., dotsent

Effect of adrenocorticotrophic hormone on the course of rheumatic heart diseases in children. *Pediatrics* no.2:35-39 F '57.

(MIRA 10:10)

1. Iz L'vovskogo nauchno-issledovatel'skogo instituta okhrany materinstva i detstva (dir. I.D.Yashchuk)

(RHEUMATIC HEART DISEASE) (ACTH)

RUDNEV, I.M., dotsent

Blood vessels in rheumatic fever in children. Pediatriia no.8:
63-67 '61. (MIRA 14:9)

1. Iz kafedry propedevticheskoy i fakul'tetskoy pediatrii (zav. - dotsent I.M. Rudnev) L'vovskogo meditsinskogo instituta (dir. - prof. L.N. Kuzmenko) i L'vovskogo nauchno-issledovatel'skogo instituta okhrany materinstva i detstva (dir. - kand.med.nauk L.Ya. Davydov).

(RHEUMATIC FEVER) (BLOOD VESSELS)

KOROTKOV, I.I., kand. med. nauk, otv. red.; KUDIMOV, I.I.,
red. detekt. maski, prof., san. otv. red.; KARESEV,
M.S., prof., red.; RYBEN, I.N., prof., red.; MELNIK,
R.V., kand. med. nauk, red.; YUSPINA, E.Z., kand. med.
nauk, red.

[Protection of the health of the mother and the newborn
infant] Otkranye zdorov'ya materi i novorozhdennogo. Kiev,
Sterevita, 1964. 235 p. (KIRA 1213)

L. Khar'kovskiy nauchno-issledovatel'skiy institut zhenskoy
santirovaniya i detstva im. N.K. Krupskoy.

ALIKHANCV, E.N.; ARUSHANCV, N.A.; AKHUNDOV, V.Yu.; ALIZADE, M.A.; AZIZBEKOV, Sh.A.; BAGIROV, M.A.; VEZIROV, S.A.; VOLOBUYEV, V.R.; VEKILOV, F.M.; GADZHIYEV, N.M.; GUSEYNOV, D.M.; GUSEYNOV, I.A.; DADASHEV, K.K.; DADASHZADE, M.A.; DALIN, M.A.; ISKENDEROV, M.A.; KAZIYEV, M.A.; KARAYEV, A.I.; KASHKAY, M.S.; KEL'DYSH, M.V.; KERIMOV, A.G.; LEMBERANSKIY, A.D.; MAMEDOV, G.K.; MEKHTIYEV, M.R.; MIRZOYEV, S.A.; NAGIYEV, M.F.; NASRULLAYEV, N.I.; OGUDZHEV, A.K.; RADZHABOV, R.A.; RUDNEV, K.N.; SADYKHOV, R.N.; SEMENOV, N.N.; TOPCHIEV, A.V.; TOPCHIBASHEV, M.A.; TAIROVA, T.A.; KHALILOV, Z.I.; EFENDIYEV, G.Kh.; SHUKYUROVA, Z.Z.

IUsif Geidarovich Mamedaliev. Azerb.khim.zhur. no.6:5-6 '61.

(MIRA 15:5)

(Mamedaliev, IUsif Geidarovich, 1905-1961)

RUBIN, E.M.

Role of standardization in the improvement of production quality
and in the development of the national economy. Standartizatsiya.
28 no.9:9-11 S '64. (MIRA 18:2)

1. Zamestitel' predsedatelya Soveta Ministrov SSSR.

ARNAUTOV, A.K.; BURSHTEYN, Sh.A.; GENES, V.S.; KOGAN, I.K.; MAMATYUK, Ye.M.;
LITVINENKO, A.S.; MOSKALENKO, I.P.; NIKOLAYEVA, M.G.; PISKAREVA, Ye.V.;
POPOVA, L.Ya.; RUDNEV, L.I.; SIDYAKIN, V.V.; TKACH, V.K.;
FASTYUCHENKO, O.V.; FISUN, A.N.; FRENKEL', L.A.; TSYBENKO, N.A.;
SHRAMENKO, B.I.

Comparative study on the effect of X rays (197 kv) and braking radiation generated with linear accelerator (3 Mev) upon animals. Radiobiologiya 2 no.2:211-215 '62.
(MIRA 15:4)

1. Khar'kovskiy institut meditsinskoy radiologii i Ukrainskoy fiziko-tekhnicheskoy institut AN USSR, Khar'kov.

(RADIATION--PHYSIOLOGICAL EFFECT)

ALEKSEYEV, V.V.; DOBRONRAVOVA, A.O.; AZAROV, A.Ya.; MASLENNIKOV, I.Ya.;
RUDNEV, L.M., retsenzent; KHOREV, B.S., retsenzent; KRISHTAL',
L.I., red.; USENKO, L.A., tekhn. red.

[Moscow - Chop; railroad guide] Moskva - Chop; zheleznodorozhnyi
putevoditel'. Moskva, Transzheldorizdat, 1962. 150 p.

(MIRA 15:12)

(Railroads—Guides)

RUDNEV, L.N., gornyy inzh.-marksheyder; TIMASHEV, V.I.

Reasons for the fracture of walls in deep ore chutes and
selection of a place for their location. Gor. zhur. no.5:
29-34 My '64. (MIRA 17:6)

1. Leningradskiy gornyy institut (for Rudnev). 2. Glavnyy
marksheyder Altyn-Topkanskogo svintsovo-tsinkovogo kombinata
(for Timashev).

ARANOVICH, V.B.; GURICH, A.A.; KROTOV, G.A.; RUDNEV, L.N.

Technical errors in sound ranging measurements in mine
surveying. Zap. LGI 46 no.2:117-130 '63. (MIRA 17:6)

KAZAKOVSKIY, D.A., prof.; GURICH, A.A., dotsent; ARANOVICH, V.B., inzh.;
RUDNEV, L.N., inzh.

Use of sonar in mining. Gor. zhur. no.6:58-62 Je '62.
(MIRA 15:11)

1. Leningradskiy gornyy institut.
(Mine surveying)
(Sonar)

RUBNEV, P. N., 1927.

Investigation of the 170-3 ultrasonic profilograph for mine
shafts and ways of improving it. (Trudy VNIMI no. 50:344-354
163.

Sound ranging survey of ore bodies in the Glyn-Tepkun Mine
Administration. (Ibid. 1955-1957

(MIRA 10:10)

1ST AND 2ND COPIES															3RD AND 4TH COPIES														
PROCESSES AND PROPERTIES INDEX																													
<div style="position: relative;"> C <div style="position: absolute; top: 10px; right: 10px; border: 1px solid black; padding: 5px; width: 30px; text-align: center;">7</div> <p style="margin-top: 100px;"> Method of detecting arsenious acid. M. M. Rudnev and P. M. Rudnev. <i>Zashchita Lab.</i> 13, 128(1947). To 3 ml. of the soln. neutralized to a pH of 7-8 add dropwise 0.1 N AgNO₃ to complete pptn. and boil for 3-4 min. Blackening of the ppt. after the boiling confirms arsenite. </p> <p style="margin-top: 50px;"> Phosphates, arsenates, sulfates, nitrates, chlorides, and starch do not interfere. A method is suggested for the analysis of seeds treated with arsenious compds. </p> <p style="text-align: right; margin-right: 50px;">H. Z. K.</p> </div>																													
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2097-2098															2099-2100														

BASOVA, N.N.; SUCHKOV, Yu.G.; GUSEV, V.M.; RUDNEV, M.M.

Ornithosis in wild and domestic fowl. Zhur.mikrobiol.epid.i immun.
31 no.9:3-7 S '60. (MIRA 13:11)

1. Iz Nauchno-issledovatel'skogo protivochumnogo instituta
Kavkaza i Zakavkaz'ya.
(ORNITHOSIS)

CHERCHENKO, I.I.; RUDNEV, M.M.

Accelerated indication of the plague pathogen by means of
intracranial infection of white mice. Zhur. mikrobiol., epid. i
immun. 42 no.7:108-113 J1 '65. (MIRA 18:11)

1. Stavropol'skiy filial Vsesoyuznogo nauchno-issledovatel'skogo
protivochumnogo instituta "Mikrob".

LO0912-66 EWT(1)/EWA(j)/EWA(b)-2 JK

ACCESSION NR: AP5017022

UR/0016/65/000/007/0108/0113
576.851.45.073.2

AUTHOR: Cherchenko, I. I.; Rudnev, M. M.

TITLE: Intracranial infection of white mice as a rapid method of detecting *Pasteurella pestis*.

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 7, 1965, 108-113

TOPIC TAGS: pathogenesis, infective disease, bacteria

ABSTRACT: *Pasteurella pestis* was detected in white mice 24-72 hours sooner after intracranial infection than after intraperitoneal or subcutaneous infection whether the strains used possessed high (261) or low virulence (1452/579 and 510). Sensitivity to plague was intensified by combining the intracranial with another method of injection. For example, 92% of the mice died of disseminated plague within 48 hours of the combined injection as compared with 71% after intracranial injection alone. Moreover, doses considered non-lethal with subcutaneous or intraperitoneal infection killed the animals fairly rapidly when they were injected intracranially. Thus, the recommended method of intracranial injection of mice with suspected

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LO0912-66

ACCESSION NR: AP5017022

material is of value in providing rapid confirmation of the presence of *P. pestis*, especially when dealing with cultures whose virulence for mice is low when ordinary inoculation methods are used. Orig. art. has: 3 figures. 2

ASSOCIATION: Stavropol'skiy filial Vsesoyuznogo nauchno-issledovatel'skogo protivochumnogo instituta "Mikrob" (Stavropol Affiliate, "Mikrob" All-Union Scientific Research Institute of Plague)

SUBMITTED: 22Nov64

ENCL: 00

SUB CODE: LS

NO REF SOV: 003

OTHER: 000

Card 2/2

DP

LEVI, M.I.; BASOVA, N.N.; ZUS'MAN, R.T.; CHERNIKOVA, T.M.; SUCHKOV, Yu.G.;
HUDNEV, M.M.

Incidence of influenza in Stavropol during the 1957 pandemic. Vop.virus.
4 no.5:573-580 S-O '59. (MIRA 13:2)

1. Nauchno-issledovatel'skiy protivochumnyy institut Kavkaza i Zakav-
kaz'ya, Stavropol'.
(INFLUENZA, statist.)

YEMEL'YANOVA, O.S.; RAVDONIKAS, O.V.; YEGOROVA, L.S.; PANINA, N.V.;
PILIPENKO, V.G.; RUDNEV, M.M.; SIL'CHENKO, V.S.; BESSONOVA, M.A.;
UL'YANOVA, N.I.; VEENEYEVA, Ye.V.; BORODIN, V.P.; SAMSONOVA, A.P.;
MYASNIKOV, Yu.A.; LEVACHEVA, Z.A.

Approbation of an improved tularemia diagnosticum. Zhur.
mikroobiol., epid. i immun. 40 no.10:85-92 O '63.

(MIRA 17:6)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamaley
AMN SSSR, Omskogo instituta prirodnookhagovykh infektsiy,
Protivochumnogo instituta Kavkaza i Zakavkaz'ya, Voronezhskoy,
Leningradskoy, Volgogradskoy, Tul'skoy sanitarno-epidemiologicheskikh
stantsiy.

YAROVY, L.V., dotsent; RUDNEV, M.M.; SHALOMAYENKO, V.A.; KABAKOVA, L.V.;
BENINSON, S.M.; KRAYNEV, L.G.

Clinical and epidemiological characteristics of an outbreak of
Q fever in children. *Pediatrics* 42 no.5:73-76 My'63

1. Iz kliniki infektsionnykh bolezney (zav. - dotsent L.V.
Yarovoy) Stavropol'skogo meditsinskogo instituta, Stavropol'-
skogo protivochumnogo instituta i otdela osobo opasnykh in-
fektsiy sanitarno-epidemiologicheskoy stantsii Checheno-Ingush-
skoy ASSR.

*

BASOVA, N.N.; CHERNIKOVA, T.M.; SUCHKOV, Yu.G.; RUDNEV, M.M.

Q fever and ornithosis in wild birds. Vop.virus. 6 no.5:586-591
S-O '60. (MIRA 14:7)

1. Virusologicheskiy otdel Nauchno-issledovatel'skogo protivochumnogo
instituta Kavkaza i Zakavkaz'ya, Stavropol'.
(Q FEVER) (ORNITHOSIS)

RUDNEV, M. P.

1376. Experience with annular kilns at the Semilukskii Works.—M. V. KRASNOSEL'SKII and M. P. RUDNEV (*Ogneupory*, 22, 23, 1957). In Russian. Measures taken since 1945 to improve the efficiency of a chamber kiln for firing blast-furnace refractories are described in detail. A peculiarity of the firing schedule is the slow temperature increase. The firing cycle takes 12 hr. and takes place in a

Mello

RUDNEV, M.F.

AUTHORS: Boldyrev, L.V., Krasnosel'skiy, M.V., Rudnev, M.F. 131-3-2/16

TITLE: The Increase of the Efficiency of Shaft Furnaces With Gas Heating
(Povysheniye proizvoditel'nosti shakhtnykh pechey na gazovom
otoplenii)

PERIODICAL: Ogneupory, 1958, Vol 23, Nr 3, pp 101-105 (USSR)

ABSTRACT: At the Semiluki Plant for Refractories it was possible, by improving the construction of furnaces and of the burning process, to increase the daily output from 25-40 t to 65-70 t. I.A. Savkevich assisted in this work. The authors further describe the construction of the furnaces as well as the working process in detail. The revolving grate is shown in the illustration and its useful cross section is given by table 1. At present the burning process takes place as follows: 1.) The preparation of clay for burning. The clay is crushed by means of a machine and is formed into briquettes of 1 kg weight and shaped like flattened balls (\varnothing 120 and 90 mm). The quality of the clay and of the briquettes is continually controlled. 2.) Charging and discharging of the furnace. Every furnace is discharged in the course of each working shift according to the temperature of burning, of the material with which the furnace is filled, and the moisture content of the briquettes.

Card 1/2

The Increase of the Efficiency of Shaft Furnaces
With Gas Heating

131-3-2/16

In accordance with the work to be performed the control apparatus KЭИ-3 are adjusted, by means of which the charging drums are controlled (table 2). They are blocked by means of an electron millivolt meter which continuously controls the exhaust gases and which switches the control apparatus on or out according to necessity. Discharging of the furnace takes place in dependence of charging the furnace in order that a constant level of material be maintained. 3.) Gas- and air supply is determined according to consumption per hour, regulation being carried out according to burners. 4.) Control of furnace work. In the shaft furnaces of the Semiluksk works the following measurements are continuously carried out: Gas consumption, temperature of exhaust gases, temperature of the material in the furnace, furnace pressure and the level of material in the furnace. Besides, the temperature of the discharging fireclay bricks and their quality is continuously controlled. Table 3 contains the working data of shaft furnaces for the years 1950-1957. There are 3 tables, 1 figure, and 4 Soviet references

ASSOCIATION: Semiluki Plant for Refractories (Semilukskiy ognepornyy zavod)

1. Gas burning furnaces-Operation
2. Furnaces-USSR
3. Refractory materials-Processing
4. Refractory materials-Production

Card 2/2

RUDNEV, N.

Work results of the 15th session of the European Economic
Commission. Vop.ekon. no.8:89-99 Ag '60. (MIRA 13:7)

(Europe--Economic conditions)

USSR/Cultivated Plants - Commercial. Oil-bearing. Sugar-bearing. H.

Abstr Jour : Zh. Prikl. Biol., No 1, 1956, 14223

Author : Rudnev, N.

Inst :

Title : Influence of Pollination and Method of Raising the

Yield of Local Hemp.

Orig Pub : S. K. Vashkiri, 1957, No 3, 26.

A abstract : A two-year trial of seeds obtained by free pollination of local hemp with various genotypes showed that the duration of the vegetation period and yields did not change significantly. The yield of fibers increased by 2-3 centners, and the yield of seeds by 1.5-2 centners/ha. The plants were very resistant to the cold and the time ripening was early.

Card 1/1

RUDNEV, N.

Victory of the "Variag." Voen. znan. 35 no.2:25 F '59.

(MIRA 12:6)

(Russo-Japanese War, 1904-1905--Naval operations)

RUDNEV, N.

"Gravimetric methods in chemical analysis. Vol.1:Theory and procedures of gravimetric analysis. Vol.2.:Determination of metals. Vol.3: Determination of nonmetals" by L.Edrey. Reviewed by N.Rudnev. Zhur. anal.khim. 17 no.8:1032 N '62. (MIRA 15:12)
(Chemistry, Analytical—Quantitative)
(Erdey, L.)

RUDNEV, N.A.; BIL'KEVICH, I.N.

Study of the coprecipitation in the system Sb^{3+} , Tl^+ ,
 H^+ // S^{2-} . Zhur. neorg. khim. 10 no.1:268-271 Ja '65.
(MIRA 18:11)

1. Submitted May 3, 1963.

CA

PROCESSING AND PROPERTY NOTES

Effect of nitric acid upon precipitation of barium sulfate. N. A. RUDNEV. *Vyskazy Zapiski Kazan. Gosudarst. Univ. (Sci. Rept., State Univ. Kazan)* 90, 105 (1948). The use of BaNO_3 or the presence of HNO_3 gives high results because of the formation of $(\text{BaNO}_3)_2\text{SO}_4$. With increasing concn. of HNO_3 the error increases, reaches a definite limit, then decreases. Washing with hot water decomps $(\text{BaNO}_3)_2\text{SO}_4$ and frees the Ba ion. J. G. TOLPIN

ASU-SLA METALLURGICAL LITERATURE CLASSIFICATION

140000

Be

Precipitation of barium sulphate in presence of chloride and bromide ions. N. A. RUDNEY (Trans. Butlerov Inst. Chem. Tech., 1934, No. 1, 143-156).—The effect of HCl or HBr on the wt. of BaSO_4 obtained in determining Ba^{++} or SO_4^{--} is explained. CH. ANN. (c)

BC A-1

PROCESSES AND PROPERTIES INDEX

Volumetric determination of tin with ceric sulphate. N. A. BODUNOV. (Trans. Butlerov Inst. Chem. Tech. Kazan, 1934, No. 2, 51-52).—The titration of Sn^{2+} with $\text{Ce}(\text{SO}_4)_2$, with NHPb, as indicator, is described. Ch. Ans. (c)

ASSOCIATE METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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BC 2-1

PRECIPITATION OF BARIUM SULPHATE. N. A. RUD-
 NY (Trans. Kirov Inst. Chem. Tech. Kazan, 1935, No.
 4-5, 107-109).—The amount of precipitant pptd.
 together with BaSO_4 when different salts of Ba are
 added to aq. H_2SO_4 varies inversely with the solubility
 of the precipitant, and directly with the concn. of its
 anion; hence $\text{Ba}(\text{NO}_3)_2$ is co-pptd. even in absence of
 HNO_3 , BaCl_2 in presence of HCl , and BaBr_2 only when
 $\text{H}_2\text{SO}_4 : \text{HBr} = 1 : 240$. R. T.

ASH-51A METALLURGICAL LITERATURE CLASSIFICATION

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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CA.

Physicochemical analysis of systems significant in analytical chemistry. XVIII. Theory of precipitation of barium sulfate from the point of view of turbidimetric analysis. I. V. Tananaev and N. A. Rudnev (Acad. Sci., U.S.S.R.). *Zhur. Anal. Khim.* 5: 82-9 (1950); cf. C.A. 44: 2402i. The systems studied were BaSO_4 , $\text{C}_2\text{H}_5\text{OH}$ - H_2O and BaSO_4 , BaCl_2 , $\text{C}_2\text{H}_5\text{OH}$, H_2O . KOH was used to decrease the soly. of BaSO_4 , and thereby obtain a complete light-absorption curve with a clear max. Equiv. quantities of H_2SO_4 and BaCl_2 solus. were combined in a mixt. of H_2O and KOH , the total vol. being 50 ml. Where an excess of BaCl_2 was desired it was added simultaneously with the stoichiometric quantity of BaCl_2 . The alc. in the final mixt. made up 0.50% and the excess BaCl_2 was 0.03 M. Light absorption readings were taken at 0.5 and 1.0 min. at 1 min. intervals. The light absorption of the suspension increased sharply with the alc. content and reached a max. at 40% of alc. after which it dropped sharply. At above 50% of alc. it would reach practically zero. The drop in light absorption with an increase in the alc. content is attributed to an increase in the dispersion of BaSO_4 . The behavior of light absorption in the presence of an excess of BaCl_2 was analogous. More striking was the behavior of the maxima on the curves under the influence of excess BaCl_2 . At first the max. somewhat diminished and then rose sharply. The effect

of BaCl_2 is explicable by its action on BaSO_4 , in which case it augments the effect of HCl . This does not explain the fluctuation of the max. Excess BaCl_2 affects not only the dispersion of BaSO_4 , but apparently also its crystal form as well as the bulk of the ppt. due to copptn. Both of these affect the light absorption. Thus, the light absorption of a BaSO_4 suspension is complex and depends greatly on circumstances of pptn., primarily on the alc. content and the excess BaCl_2 . Therefore, care must be exercised when using this method for the detn. of SO_4^{--} either with the aid of calibration curves or by turbidimetric titration.

M. Hosh

Physicochemical analysis of systems significant in analytical chemistry XIX Investigation of the system $\text{BaSO}_4\text{-NaCl-CH}_3\text{COOH-H}_2\text{O}$ from the point of view of turbidimetry. I. V. Ivanov and N. A. Kuznetsov, *Zh. fiz. khim.*, 1964, 38, 1, 1-5. (S.S.R.U., *Zh. fiz. khim.*, 1964, 38, 1, 1-5.)
 44, 45124.—The white, studied were prepared by adding to 12.5 ml of 0.014 M H_2SO_4 a NaCl solution, H_2O , and finally BaCl_2 solution to make the total vol. 20 ml. The quantity of BaCl_2 in all cases was equal to the H_2SO_4 . The concn. of NaCl was 0.1 M and the alc. content was 0-50% by vol. From the time BaCl_2 was added, extinction readings were taken at definite intervals after 0.25, 5 min. Time was an important factor in the behavior of the system. This time factor varied with the composition of the system. By plotting time vs. extinction a series of curves were obtained depending on the alc. and NaCl content. In the absence of NaCl the curves did not change with time. With 0.1-1.0 M NaCl there was a decrease in extinction with time. At small alc. content the extinction increased with time, the increase being greater as the concn. of NaCl rose. At a NaCl content of 1 M, the curves had a distinct max. Thus, NaCl retarded 250% even at fairly high alc. content. In the absence of alc. precip. was arrested completely for several min. At a high concn. of NaCl the coagulating effect of the salt is more pronounced. NaCl increases somewhat the solubility of BaSO_4 , while alc. has the opposite effect. The molar extinction coeff. corresponding to max. absorption was 142. This value coincided with the analogous value in the system $\text{BaSO}_4\text{-BaCl}_2\text{-EtOH-H}_2\text{O}$. Since the effect of NaCl and BaCl_2 on BaSO_4 is opposite, it is evident that the degree of dispersion coincides with max. absorption in the system $\text{BaSO}_4\text{-EtOH-H}_2\text{O}$ can be attained either by retarding crystal. i.e., by adding an agent which enhances the solubility of BaSO_4 , or by accelerating the formation of primary particles as compared to the secondary process of their aggregation. In the former case the max. shifts to the right until it reaches its limiting value, in the 2nd case the max. shifts to the left until it attains its greatest value. It was observed that the form of the ppt. differs depending on the presence of BaCl_2 and NaCl. In the absence of these salts, the ppt. is loose and flaky, while in the presence of BaCl_2 or NaCl the crystalline structure is pronounced.

M. Hosh

C.A.

RUDNEV, N. A.

Chemistry, Analytical - Qualitative

Qualitative chemical analysis. N. I. Blok. Reviewed by N. A. Rudnev. Sov. kniga
No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

RUDNEV, N.A.

B. I. Ob. A. I.
July, 1963
Preparation of
Inorganic Substances

Investigation of co-precipitation of sulphides by means of radioactive indicators. N. A. Rudnev (*J. anal. Chem., USSR, 1953, 8, 3-10*). By means of the labelled atoms ^{65}Zn , ^{59}Co , and ^{55}Fe , co-pptn. of Zn, Co, and Fe with sulphides of Group II metals by

pptn. in 0.3 N. acid is studied. In 0.001 M—0.0005 M. solutions of the salts in 0.3 N-HCl or, with Ag, 0.3 N-HNO₃, the % of the Zn pptd. is 40.2 with HgS, 11.2 with CuS, 9.5 with CdS, 3.7 with Bi₂S₃, and 3 with SnS₂; that of Co pptd. is 8.1 with SnS₂, 5.5 with HgS, and 3.4 with CdS; and that of Fe pptd. is 8.9 with SnS₂, 6.5 with Sb₂S₃, 3.2 with CdS, and 2.8 with As₂S₃. The least amount (< 0.3%) of co-pptn. of Zn, Co, and Fe occurs with Ag₂S. In the remaining cases the co-pptn. varies between 0.5 to 2%. With lower concn. co-pptn. is greatly reduced, except for Co and Fe with SnS₂, Co with HgS, and Zn with CdS and SnS₂.
G. S. SMITH.

BLOK, N.I. [author]; RUDNEV, N.A. [reviewer].

About N.I.Blok's book "Qualitative chemical analysis." N.I.Blok. Re-
viewed by N.A.Rudnev. Zhur.anal.khim. 8 no.4:238-239 J1-Ag '53.

(MLRA 6:8)

(Chemistry, Analytical--Qualitative) (Blok, N.I.)

Rudnev, N. H.

Coprecipitation of nickel, manganese, manganese, and zinc with the metal sulfides of the hydrogen sulfide group. J. P. Alimarin, N. A. Rudnev, and L. I. Guseva. *Primenenie Mechenykh Atomov v Anal. Khim., Akad. Nauk S.S.S.R., Inst. Geokhim. i Anal. Khim.* 1955, 12-23; cf. C.A. 47, 4098a. Copptn. of these metals with members of the IV and V groups was studied with the aid of Mn^{2+} , Ni^{2+} , Zn^{2+} and Tl^{3+} . Pptn. with H_2S was carried out in 0.3N acid solns. In the solns. contg. Ni there was 101 γ Ni and the Ni:M ratio was 1:58. The Mn solns. contained 111 γ Mn and the Mn:M ratio was 1:49. Ni and Mn copptd. only slightly with the sulfides, except in the cases of Bi_2S_3 and SnS_2 where copptn. of Ni was 1.24 and 2.86%, resp., and HgS and SnS_2 where copptn. of Mn was 1.6 and 1.5, resp., in the Tl-contg. solns. There was 2.86 γ and the Tl:M ratio was $1:6.95 \times 10^4$. Copptn. in these solns. was very high; copptn. was smallest with Ag_2S (28.0) and highest (96.0%) with HgS in solns. where the mol. ratio of Tl:M was 1:1 copptn. was appreciably smaller; in these solns. copptn. was smallest (1.9 and 2.0% with HgS and Ag_2S , resp.) and highest (48.2%) with As_2S_3 . The Zn solns. contained 560 γ of Zn and the Zn:M ratio was 1:12. When the H_2S was passed at the same rate as in the other expts. (50-60 bubbles/min.) copptn. of Zn was small and reached 7% with CdS and 10% with SnS_2 . When the rate of H_2S passing was raised to 500 cc./min. the copptn. of Zn went up from 7.0 to 56.6% with CdS , from 10.0 to 47.7% with SnS_2 , from 0.8 to 43.2% with HgS , and from 0.4 to 11.1% with Bi_2S_3 . Copptn. with CuS , PbS , Ag_2S , As_2S_3 , and Sb_2S_3 remained unaffected. Delay between pptn. and filtering caused more Zn to be pptd. with CdS . In changing the acidity between 0.05 and 0.4N the amt. of Zn copptd. with CdS and SnS_2 dropped with increasing acidity. M. Hoseh.

(2)

RUDNEV, N.A.

Use of surface-active substances for the prevention of coprecipitation of ions with sulfide precipitates. Zhur.anal.khim. 10 no.4:217-221 J1-Ag '55. (MLRA 8:9)

1. Institut geokhimii i analiticheskoy khimii imeni V.I.Vernadskogo AN SSSR, Moscow.
(Precipitation (Chemistry)) (Sulfides) (Surface-active agents)

USSR/Analytical Chemistry. General Topics.

3-1

Abs Jour : Referat. Zhurnal Khimiya, No 6, 1957; 19511.

Author : N. Rudnev.

Inst : -

Title : Application of Isotopes and Radiations in Chemical Analysis.

Orig Pub : V Sb. Primeneniye Atom. Energii v Mirnykh Tselyakh, M., 1956, 149-159.

Abstract : The application of radioactive isotopes (RI) to the early coprecipitation, extraction, and solubility is discussed. The quantitative determination of elements with RI is possible by the gravimetric and volumetric methods. The following new analysis methods are briefly described: a) the radioactivation analysis (method sensitivity down to 10^{-11} g), b) the method of isotope dilution; c) determination of intensity of β -radiation reflection. The possibilities of the application of RI to the development of new methods of chemical analysis and in chemical engineering for production control are shown.

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-25-

Chem. Sorption of some surface-active dyes by sulfides in the course of their aging. N. A. Rudnev and L. I. Guseva (V. I. Vernadskii Inst. Geochem. and Anal. Chem., Acad. Sci. U.S.S.R.; Moscow). *Zhur. Anal. Khim.* 11, 44-64 (1966).—The adsorption of a dye (neutral red) by freshly pptd. and aged metal sulfides was studied with the view of elucidating the structure of sulfide ppts. and the changes that they may undergo with time. Into a 150-ml. flask were added a soln. of the metal salt in such a quantity that the sulfide ppt. would be 0.1 g., HCl (1:1) to make it 0.3N, 10 ml. of 0.5% soln. of neutral red, and H₂O to a total vol. of 100 ml. The flask was placed in a thermostat at 28°, and after 10 min. H₂S was passed for 5 min. at approx. 600 cc./min. To the flask was then added 10 ml. H₂O satd. with H₂S and shaken for 20 min. After definite time intervals 3-5 ml. of soln. was centrifuged and the amt. of dye remaining was detd. colorimetrically. In another series of expts. the dye was added after pptn., in which case it was added after passing H₂S and in place of the 10 ml. H₂O satd. with H₂S. After 15 min. the highest adsorption was by As₂S₃, 97.2%; least by HgS, PbS, SnS, and Bi₂S₃, 46.6, 44.9, 48.8, and 50.0%, resp.; and in between were CdS, Ag₂S, and Sb₂S₃, 79.0, 58.2, and 60.4%, resp. With respect to time the sulfides were divided into 3 groups: the adsorption of dye by HgS, Bi₂S₃, Sb₂S₃, and SnS increased with time; adsorption by CuS and Ag₂S decreased with time; and adsorption by CdS, PbS, and As₂S₃ remained practically the same. Adsorption by Hg, Cu, and As sulfides was not affected by the time when the dye was added. Thus, the aging of these sulfides is not affected by the dye. An increase or decrease in the amt. of dye adsorbed on aging is attributed to disaggregation or aggregation of the sulfide with time. An electron-microscope study of Ag₂S, SnS, CuS, As₂S₃, and Sb₂S₃ gels showed them to have a porous cellular structure. The structure of Ag₂S was denser than that of the other sulfides; PbS and CdS had a cryst. structure.

M. Hosen

VINOGRADOV, A.P.; ALIMARIN, I.P.; KLYACHKO, Yu.A.; RYABCHIKOV, D.I.;
HUDNEV, N.A.; HUDENKO, N.P.; TOROPOVA, V.F.; SHIFRIN, Kh.V.

Aleksel Mikhailovich Vasil'eyv. Zav.lab. 22 no.7:887 '56. (MIRA 9:12)
(Vasil'ev, Aleksel Mikhailovich, 1882-1956)

RUDNEV, N.A.

"Analytical chemistry"; bibliography of Russian publications for
1941-1952 by A.I.Busev. Reviewed by N.A.Rudnev. Zhur.anal.khim.
12 no.2:275 Mr-Apr '57. (MLRA 10:7)
(Bibliography--Chemistry, Analytical) (Busev, A.I.)

Rudnev, NA

JOURNAL OF ANALYTICAL CHEMISTRY
Vol XII, Nr 4, 1957STUDIES ON THE MECHANISM OF CO-PRECIPITATION OF CATIONS WITH
SULPHIDES BY MEANS OF RADIOACTIVE ISOTOPES

N. A. Rudnev and A. A. Masur

V. I. Vernadsky Institute of Geochemistry and Analytical Chemistry, Academy of
Sciences USSR, Moscow

The kinetics of the co-precipitation of Ga^{3+} , In^{3+} and Tl^{+} with HgS , CuS and CdS in connection with the process of ageing of these sulphides and changes in their structure and surface has been studied. The disintegration of HgS particles, diminution of their size and extension of the precipitate surface occur in time. With CuS the aggregation of particles and diminution of the surface take place. The effective sorbing surface of CdS does not change with its ageing.

It has been shown that the co-precipitation of Ga^{3+} and In^{3+} with CuS and CdS and the liberation of Ga^{3+} and Tl^{+} from HgS are connected with the crystallization of HgS , CuS and CdS and do not depend on the extension or diminution of the effective surface of the precipitate.

In the process of sulphides ageing the co-precipitation can increase (Ga^{3+} , In^{3+} — CuS , CdS), diminish (Ga^{3+} , Tl^{+} — HgS) or remain unchanged (In^{3+} — HgS , Tl^{+} — CuS).

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ALIMARIN, I.P.; RUDNEV, N.A.

Utilization of radioactive isotopes in analytical chemistry.

Zhur. anal. khim. 12 no.5:587-592 S-O '57.

(MIRA 10:11)

(Radioisotopes)

AUTHOR: Bilimovich, G. N.
 TITLE: Section of Analytical Chemistry of the VIII World Congress on General and Applied Chemistry
 PERIODICAL: Zhurnal analiticheskoy khimii, 1959, Vol 14, No 4, pp 511-512 (USSR)

ABSTRACT:

Approximately 300 persons participated in the work of the Department of Analytical Chemistry. They represented representatives of various scientific research institutes, higher schools and industrial enterprises in Russia, co-located from China, Bulgaria, the GDR, Poland, Hungary, and Italy. Approximately 70 reports were heard. In his opening speech, G. N. Bilimovich reported on the achieved results and on modern problems of analytical chemistry. G. N. Bilimovich reported on the application of physico-chemical analysis in heterogeneous systems for the solution of a series of problems in analytical chemistry. G. N. Bilimovich reported on modern aims in the use of organic reagents. A. K. Babits showed at the example of halide and thiocyanate reagents the correlation between the stability of complexes and the position of the corresponding central atoms in the periodic system. V. M. Kuznetsov and G. N. Bilimovich lectured on the periodic system of elements, G. N. Bilimovich lectured on the stability of oxime molecules. G. N. Bilimovich lectured on the character of reaction of some compounds in the formation of complexes. The problem of the application of heteropolysalts in analytical chemistry was dealt with in the lectures of G. N. Bilimovich and co-workers, and A. I. Kotlov and N. A. Polubinskaya. A large number of lectures dealt with the use of new organic reagents in analysis: A. K. Babits and G. N. Bilimovich reported on the application of dialkyl and diaryl dithiophosphoric acid for the separation of elements, A. I. Kotlov used phosphoric acid and aryl phosphinic acid. E. P. Lastovskiy and his co-workers treated some properties of new complexes. The lecture of G. N. Bilimovich, G. G. Shitko and A. I. Kotlov dealt with the photometric determination of a series of elements using fluorimetric methods. G. N. Bilimovich lectured on the use of halochromism in analytical chemistry. G. N. Bilimovich and A. I. Kotlov lectured on the determination of stability constants by differential spectrophotometry. Yu. V. Kuznetsov and V. A. Stolyarova reported on new highly sensitive analysis methods using an ultraviolet microscope. Several lectures dealt with methodical and theoretical problems of spectrum analysis (G. N. Bilimovich and G. A. Shumilov, E. I. Yanushkin and co-workers). M. S. Polukhov and M. N. Nikonova treated the perfection of flame photometry. Several lectures dealt with the determination of elements by polarography (G. N. Bilimovich, E. P. Lastovskiy and G. A. Shumilov). In P. Galantev's new results in using fixed electrodes were reported by G. N. Bilimovich and Yu. V. Kuznetsov and co-workers. The lecture of G. N. Bilimovich and V. A. Stolyarova treated the use of supercritical fluids in chromatography. G. N. Bilimovich and V. A. Stolyarova showed possibilities of prediction of conditions of chromatographic separation of elements based on their position in the periodic system. G. N. Bilimovich reported on the use of ion exchange in the investigation of the state of substances in solutions. A. I. Kotlov and V. A. Stolyarova lectured on the chromatographic separation of a series of elements. G. N. Bilimovich reported on adapting the properties of ion exchange resins. E. P. Lastovskiy and associates reported on the chromatographic proof of sulfonamide preparations in liquids of the organics. G. N. Bilimovich and associates treated the application of high polymers in chromatographic analysis. The lecture of G. N. Bilimovich and V. A. Stolyarova dealt with gas chromatography. Several lectures treated the use of radioactive isotopes for the chromatographic investigation of complex formation (G. N. Bilimovich and associates), for the separation of elements (G. N. Bilimovich and associates), for the analysis of mixtures (G. N. Bilimovich and associates), for the separation of elements by means of various diluents (G. N. Bilimovich and associates). In the field of elementary organic microanalysis the lectures of G. N. Bilimovich and V. A. Stolyarova with associates have to be mentioned, who treated the elaboration of rapid micro-methods for the simultaneous determination of several elements from one weighed portion of boron, fluorine and silicon-organic compounds.

Card 1/4

Card 2/4

Card 3/4

dealt with gas chromatography. Several lectures treated the use of radioactive isotopes for the chromatographic investigation of complex formation (G. N. Bilimovich and associates), for the separation of elements (G. N. Bilimovich and associates), for the analysis of mixtures (G. N. Bilimovich and associates), for the separation of elements by means of various diluents (G. N. Bilimovich and associates). In the field of elementary organic microanalysis the lectures of G. N. Bilimovich and V. A. Stolyarova with associates have to be mentioned, who treated the elaboration of rapid micro-methods for the simultaneous determination of several elements from one weighed portion of boron, fluorine and silicon-organic compounds.

RUDNEV, N.A.; MALOFFYEVA, G.I.

Use of coprecipitation for concentration. Trudy Kom. anal. khim. 15:
224-235 '65. (MIRA 18:7)

RUDNEV, N.A.; MALOFEEVA, G.I.

Effect of recrystallization on the coprecipitation of cations
with copper (II), mercury (II), and silver (I) sulfides. Zhur.
anal. khim. 19 no.7:785-789 '64. (MIRA 17:11)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo
AN SSSR, Moskva.

RUDNEV, N.A.; MALOFEYEVA, G.I.

Role of the surface of sulfides and of adsorbed HS^- and S^{2-} ions in the coprecipitation of cations. Zhur. anal. khim. 19 no.2:151-155 '64. (MIRA 17:9)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo AN SSSR, Moskva.

ACCESSION NR: AP4033641

S/0075/64/019/004/0443/0450

AUTHOR: Rudnev, N. A.; Dzhumayev, R. M.

TITLE: Coprecipitation of indium with tin (IV) sulfide

SOURCE: Zhurnal analiticheskoy khimii, v. 19, no. 4, 1964, 443-450

TOPIC TAGS: indium sulfide, tin sulfide, coprecipitation, concentration, solid solution

ABSTRACT: The purpose of this investigation was to study the significance of the formation of solid solutions in precipitation of indium with a number of sulfides. The investigated system may be represented as follows: $\text{Sn (IV), In (III), H}^+/\text{S}^{2-}$, where the concentration of Sn (IV) was maintained constant and the concentration of In (III) was varied within a broad range. In the course of this work Sn (IV) sulfide was used for the concentration of indium. Tin halides are volatile and after concentration of indium they may be removed by volatilization. Thus, such a collector for indium would be highly advantageous. The amount of indium in the precipitate was determined by means of In^{114} tracer. In this study a diagram was obtained which is characteristic of the formation of solid solutions.

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ACCESSION NR: AP4033641

Indium is found in the solid phase as molecular and as "colloidal" solid solution of In_2S_3 in SnS_2 . During coprecipitation of indium with SnS_2 the distribution coefficient is 24.1 in the case of small amounts of In and 0.055 in the case of large amounts of In. It was verified that SnS_2 is a valuable collector for indium and that it is applicable to solutions with $1:10^9$ dilution. After extraction of indium, tin may be removed as SnBr_4 . "The authors express their gratitude to I. P. Alimarin for valuable suggestions in the course of the work." Orig. art. has: 6 tables and 4 figures.

ASSOCIATION: Institut geokhimi i analiticheskoy khimii im. V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry and Analytical Chemistry, Academy of Sciences SSSR)

SUBMITTED: 24Aug62

DATE ACQ: 07May64

ENCL: 00

SUB CODE: GC, MM

NO REF SOV: 006

OTHER: 007

Card 2/2

ACCESSION NR: AP4029193

S/0078/64/009/004/0991/0995

AUTHOR: Rudnev, N. A.; Bil'kovich, I. N.

TITLE: Coprecipitation in the Tl sup I, H sup I || Ge sup IV, S sup 2- system

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 4, 1964, 991-995

TOPIC TAGS: coprecipitation, thallium germanium coprecipitation, thallium absorption, germanium sulfide, thallium sulfide collector, germanium concentration, coprecipitation diagram, isomolar series method, thallium sulfogermanate, TlGeS sub 2

ABSTRACT: Coprecipitation in the Tl^I, H^I, || Ge^{IV}, S²⁻ system was studied to explain why Tl^I in an acid medium is strongly absorbed on GeS₂, and to determine whether Tl₂S may be used as a collector for concentrating traces of Ge. The coprecipitation diagram (fig. 1) was drawn from data obtained by the isomolar series method. A chemical compound is formed at a 1:1 Ge:Tl ratio. However, coprecipitation is not complete. With a 3:1 excess of Ge, coprecipitation is complete, and with excess Tl coprecipitation is greater than theoretical. X-rays show the thallium sulfogermanate TlGeS₂ to be amorphous. Equilibrium is attained

Cord 1/3

ACCESSION NR: AP4029193

in the system in 15 minutes. The fields on the diagram correspond to phases of different nature (A = GeS_2 and TiGeS_2 in different ratios, C = solid solutions of TiGeS_2 and Ti_2S). It is concluded Ti_2S can be a good collector for traces of Ge. Orig. art. has: 2 tables and 2 figures.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo, AN SSSR (Institute of Geo- and Analytical Chemistry, AN SSSR)

SUBMITTED: 11Feb63

DATE ACQ: 29Apr64

ENCL: 01

SUB CODE: GC

NO REF SOV: 007

OTHER: 002

Card 2/3

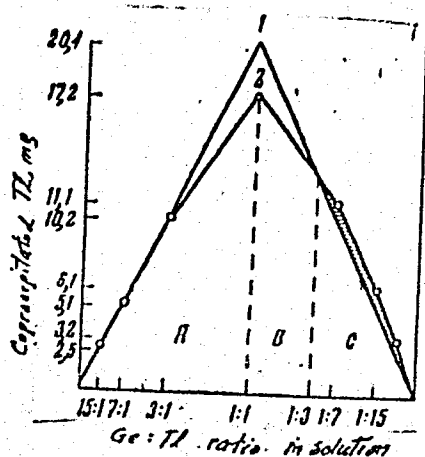
ACCESSION NR: AP4029193

ENCLOSURE: 01

Fig. 1, Coprecipitation diagram in the Tl^+ , H^+ , $Ge(IV)$, S^{2-} system.

1--theoretical diagram for the formation of $TlGeS_2$;

2--experimental diagram for the formation of $TlGeS_2$.



Card 3/3

RUDNEV, N.A.; BIL'KEVICH, I.N.

Coprecipitation in the system Tl^+ , H^+ || Ge^{IV} , S^{2-} . Zhur.neorg.khim.
9 no.4:991-995 Ap '64. (MIRA 17:4)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo
AN SSSR.

RUDNEV, N.A.; MALOFEYEVA, G.I.

Gravimetric determination of platinum, palladium, ruthenium,
rhodium as TiPtS_3 , TiPd_2S_3 , TiRu_2S_6 , TiRh_2S_4 . Zhur.anal.khim.
18 no.7:859-864 J1 '63. (MIRA 16:11)

1. V.I.Vernadskiy Institute of Geochemistry and Analytical
Chemistry, Academy of Sciences, U.S.S.R., Moscow.

RUDNEV, N.A.; MALOFEYeva, G.I.

Coprecipitation of cations with sulfides. Zhur. neorg. khim.
8 no.7:1770-1776 J1 '63. (MIRA 16:7)

1. Institut geokhimii i analiticheskoy khimii imeni V.I.
Vernadskogo AN SSSR.
(Cations) (Sulfides) (Precipitation(Chemistry))

RUDNEV, N.A.; ANFILOGOV, V.N.; MALOFEYeva, G.I.

Coprecipitation in the system In^{3+} , Tl^{+} , H^{+} || S^{2-} . Zhur. neorg.
khim. 8 no.8:1967-1972 Ag '63. (MIRA 16:8)

1. Institut geokhimii i analiticheskoy khimii imeni V.I. Vernadskogo
AN SSSR.

(Indium sulfide) (Thallium compounds)
(Precipitation (Chemistry))

RUDNEV, N.A.; MALOFEYEVA, G.I.

Study of coprecipitation in the system $Ti^{+}, H^{+} || Rh^{III}, S^{2-}$.
Zhur.neorg.khim. 8 no.2:495-498 F '63. (MIRA 16:5)

1. Institut geokhimii i analiticheskoy khimii imeni V.I.Vernadskogo
AN SSSR.

(Thallium) (Rhodium sulfide) (Precipitation (Chemistry))

RUSSIN, N.A.; ANDOPREVA, G.I.

Coprecipitation of thallium with iridium (III) sulfide.
Zhur.neorg.khim. 7 no.9:2262-2266 S '62. (MIR 15:9)

1. Institut geokhimi i analiticheskoy khimii imeni Vernadskogo
AN SSSR.

(Thallium) (Iridium sulfide) (Precipitation (Chemistry))

L 17431-63

EWP(q)/EWT(m)/BDS AFPTC JD

ACCESSION NR: AP3004352

S/0078/63/008/008/1967/1972

AUTHOR: Rudnev, N. A.; Anfilogov, V. N.; Malofeyeva, G. I. 57 55

TITLE: Analysis of coprecipitation in the system In sup 3+,
Tl sup +, H sup + when S sup 2- is present.

SOURCE: Zhurnal neorganicheskoy khimii, v. 8, no. 8, 1963,
1967-1972 27

TOPIC TAGS: In, Tl, S, coprecipitation, indium, thallium, sulfur

ABSTRACT: Authors studied the coprecipitation of thallium with
In₂S₃ by methods of isomolar series and constant concentration
of one component. Authors found that this causes the formation
of a chemical compound with the ratio Tl : In = 1 : 2. The
compound obtained has the composition TlIn₂S₃. X-ray studies

confirmed by X-rays. Coprecipitation diagrams show fields

Card 1/2

L 17431-63

ACCESSION NR: AP3004352

2

corresponding to the phases of various nature. Their limits of existence are determined by the concentration of thallium in the solution. "Authors express their gratitude to I. P. Alimarin for his valuable suggestions." Orig. art. has: 4 figures and 3 tables.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo, Akademii nauk, SSSR (Institute of geo- and analytical chemistry, Academy of sciences, SSSR)

SUBMITTED: 27Sep62

DATE ACQ: 21Aug63

ENCL: 00

SUB CODE: CH

NO REF SOV: 008

OTHER: 002

Card 2/2

RUDNEV, N.A.; MALOFEYEVA, G.I.

Coprecipitation in the system $\text{In}^{3+}, \text{H}^+ // \text{S}^{2-}, \text{ReO}_4^-$. Zhur.
neorg. khim. 8 no.7:1777-1780 J1 '63. (MIRA 16:7)

1. Institut geokhimii i analiticheskoy khimii imeni Vernadskogo
AN SSSR.

(Systems(Chemistry))
(Precipitation(Chemistry))

RUDNEV, N.A.; MALOFEYEVA, G.I.

Coprecipitation in the system Tl^+ , $H^+ // Pt^{IV}$, S^{2-} . Zhur.neorg.-
khim. 7 no.6:1443-1447 Je '62. (MIRA 15:6)
(Platinum sulfides) (Thallium compounds) (Precipitation (Chemistry))

RUDNEV, N.A.; MALOFEYeva, G.I.

Coprecipitation of Ti^{4+} with PdS . Zhur.neorg.khim. 6 no.8:1885-1890
Ag '61. (MIRA 14:8)

1. Institut geokhimii i analiticheskoy khimii imeni V.I.Vernadskogo
AN SSSR.
(Titanium) (Palladium sulfide) (Precipitation (Chemistry))

RUDNEV, N.A.; MALOFEYeva, G.I.

Coprecipitation in the system Ti^{4+} , H^{+} || ReO_4^{-} , S^{2-} . Zhur.neorg.
khim. 6 no.10:2399-2405 0 '61. (MIRA 14:9)

1. Institut geokhimii i analiticheskoy khimii imeni V.I.Vernadskogo
Akademii nauk SSSR.
(Systems (Chemistry)) (Precipitation (Chemistry))

RUDNEV, N.A.; MALOFEYeva, G.I.; RASSKAZOVA, V.S.

Determination of small quantities of thallium in rocks. Zav.lab. 27
no.1:20-21 '61. (MIRA 14:3)

1. Institut geokhimii i analiticheskoy khimii imeni V.I. Vernadskogo
Akademii nauk SSSR.

(Thallium—Analysis)
(Rocks—Analysis)

SINYAKOVA, S.I.; RUDNEV, N.A.; SHEN' YUY-CHI [Shên Yü-ch'ih]
DZHUMAYEV, R.

Polarographic determination of indium in metallic gallium.
Zhur. anal. khim. 16 no. 1:32-35 Ja-F '61. (MIRA 14:2)

1. V.I. Vernadsky Institut of Geochemistry and Analytical
Chemistry, Academy of Sciences, U.S.S.R., Moscow. Zhur. anal.
khim. 16 no. 1:32-35 Ja-F '61. (MIRA 14:2)

1. V.I. Vernadsky Institute of Geochemistry and Analytical
Chemistry, Academy of Sciences, U.S.S.R., Moscow.
(Indium—Analysis) (Gallium—Analysis)

S/078/61/006/002/012/017
3017/3054

AUTHORS: Rudnev, N. A., Malofeyeva, G. I.

TITLE: Study of Coprecipitation in the System Bi^{3+} , Tl^{+} , H^{+} // S^{2-}

PERIODICAL: Zhurnal neorganicheskoy khimii, 1961, Vol. 6, No. 2,
pp. 453 - 461

TEXT: To study the character of coprecipitation of thallium with bismuth sulfide, the authors made physicochemical investigations at constant bismuth concentration with varying thallium concentration

(Bi^{3+} : $\text{Tl} = 1 : 0.98 \cdot 10^{-4}$ to $1 : 20$). The coprecipitation of thallium with Bi_2S_3 was studied in dependence on various factors (concentration of Tl^{+} , pH of the solution, storing time of the precipitate in the mother lye, addition of thallium to the previously separated Bi_2S_3 precipitate).

Coprecipitation was observed with the radioactive isotope Tl^{204} . The Bi_2S_3 precipitates were studied by chemical and X-ray analyses. Fig. 1 shows the results of investigation concerning the coprecipitation of thallium as

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Study of Coprecipitation in the System
 Bi^{3+} , Tl^{+} , H^{+} , S^{2-}

S/078/61/006/002/012/017
 B017/B054

dependent on the thallium concentration in the solutions. The coprecipitation curve shown in Fig. 1 is characteristic of the formation of solid solutions. At higher concentrations of Tl^{+} , the ratio of Bi to Tl in the precipitate becomes 1 : 1. This corresponds to the formation of a compound TlBiS_2 . With a further increase of the thallium concentration in the solution, the Bi/Tl ratio in the solid phase rises from 1 : 1 to 1 : 1.5. Table 2 shows the Bi/Tl ratio in the sulfide precipitates. The formation of the new compound TlBiS_2 was confirmed by X-ray analysis. Previously precipitated Bi_2S_3 adsorbs higher amounts of thallium within 15 min until reaching a Bi/Tl ratio of 1 : 0.2. Aging of Bi_2S_3 was studied by electron microphotography. Particles disintegrate during aging. By exchanging experiments of Bi_2S_3 with Bi(RaE) it was found that the Bi_2S_3 precipitate had a large surface. Desorption of the coprecipitated Tl occurs during aging of the Bi_2S_3 precipitate. The desorption effect is explained by

Card 2/4

Study of Coprecipitation in the System
 $\text{Bi}^{3+}, \text{Tl}^{+}, \text{H}^{+} \parallel \text{S}^{2-}$

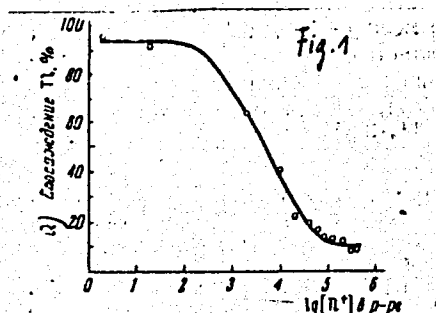
S/078/61/006/002/012/017
B017/B054

disintegration of the Bi_2S_3 precipitate. L. I. Zemlyanova and K. F. Fedotova assisted in the experiments. N. S. Kurnakov, S. F. Zhemchuzhnyy, V. A. Ageyeva, N. V. Ageyev, and Ye. S. Makarov are mentioned. The authors thank I. P. Alimarin for directing the work. There are 4 figures, 5 tables, and 11 Soviet references.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im. V. I. Vernadskogo (Institute of Geochemistry and Analytical Chemistry imeni V. I. Vernadskiy)

SUBMITTED: October 7, 1959

Card 3/4



S/078/61/006/002/012/017
B017/B054

Таблица 2
Определение соотношения между вве-
деным и таллом в смешанном осадке
сульфидов Bi_2S_3 и Tl_2S

Введено Bi , мг 1	Введено Tl , мг 1	Соотноше- ние в рас- с, теоре- тически $\text{Bi}^{3+} : \text{Tl}^{+}$	Соотноше- ние в осад- ке $\text{Bi} : \text{Tl}$
20,90	204,4	1:10	1:0,97
20,90	306,6	1:15	1:0,85
20,90	408,8	1:20	1:1,5

Legend to Fig. 1: a) in solution, b) coprecipitated Tl

Legend to Table 2: 1: added, 2: ratio in the solution, 3: ratio in the precipitate

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S/075/61/016/001/006/019
B013/B055

AUTHORS: Sinyakova, S. I., Rudnev, N. A., Shen' Yuy-chi, and
Dzhumayev, R.

TITLE: Polarographic Determination of Indium in Metallic Gallium

PERIODICAL: Zhurnal analiticheskoy khimii, 1961, Vol. 16, No. 1, pp. 32-35

TEXT: In the present paper, the authors worked out experimental conditions for the polarographic determination of 10^{-5} - $10^{-6}\%$ indium and procedures for its separation and enrichment in the analysis of metallic gallium. 0.2 M HCl was used as background for the polarographic analysis. In this solution the diffusion current is directly proportional to the indium concentration in the range $2 \cdot 10^{-6}$ - $4 \cdot 10^{-5}$ M (Fig. 1). The lowest determinable concentration of indium is $2 \cdot 10^{-6}$ M. The possibility of determining indium in the oscillographic polarograph of the GEOKhI (model 2) was checked. Oscillograms of indium in 0.2 M HCl and the dependence of the height of the peak on the concentration of indium in the solution. ✓
Card 1/3

Polarographic Determination of
Indium in Metallic Gallium

S/075/61/016/001/006/019
BO*3/BO55

tion are represented in Fig. 2. It was found that in 2-g samples, $1 \cdot 10^{-5}\%$ In can be determined polarographically, provided the final volume of the solution does not exceed 1 ml. The oscillographic method permits determination down to $2.5 \cdot 10^{-6}\%$ In. The indium contained in gallium requires concentration before it can be determined. For this, the authors suggest the following procedure: First indium is co-precipitated with cobalt sulfide. Fig. 3 shows the curve characterizing the co-precipitation of 1μ indium with varying amounts of cobalt. Precipitation of 0.1μ indium by 10 - 15 mg cobalt yields in the average 93%. Then indium is separated from still present gallium and the sulfate ions by extraction in the form of dithizone with CCl_4 in the presence of sulfosalicylic acid or as bromide or chloride by extraction with diisopropyl ether (Tab. 1). Of various masking agents, sulfosalicylic acid proved to be the most suitable for masking gallium during dithizone extraction of indium at pH 4.8 - 5.2 (Ref. 9). The latter pH was found to be optimal for the quantitative extraction of indium in the presence of sulfosalicylic acid (Fig. 4). Finally the indium content is determined polarographically by using a calibra-

Card 2/3

Polarographic Determination of
Indium in Metallic Gallium

S/075/61/016/001/006/019
B013/B055

tion curve (Fig. 1). The results obtained for indium determinations in very pure gallium appear in Tab. 2. The relative error in determination of 0.2 - 1.0 γ indium, which corresponds to 10^{-5} - $10^{-6}\%$, did not exceed 15%. The authors thank I. P. Alimarin for valuable advice. There are 4 figures, 2 tables, and 11 references: 8 Soviet and 3 Czechoslovakian.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii im.
V. I. Vernadskogo AN SSSR, Moskva (Institute of Geochemistry
and Analytical Chemistry imeni V. I. Vernadskiy of the
Academy of Sciences USSR, Moscow)

SUBMITTED: February 23, 1960

Card 3/3

RUDNEV, N.A.

Study of coprecipitation phenomena. Part 2: Method of analysis of
barium sulfate. Trudy KKHTI no.11:78-82 '47. (MIRA 12:11)
(Barium sulfate)

1. KALUGINA, Galina Ivanovna; SAMARSKIY, Aleksandr Trofimovich; RUDNEY.

Nikolay Mikhaylovich; GERASIMOV, M.A., spetsredaktor; KRUGLOVA, G.I.,
red.; CHREBYSHOVA, Ye.A., tekhn.red.

[Viticulture and wines of Moldavia] Vinodelie i vina Moldavii.
Moskva, Pishchepromizdat, 1957. 178 p. (MIRA 10:12)
(Moldavia--Viticulture) (Moldavia--Wine and wine making)

RUDNEV, N.G., kandidat tekhnicheskikh nauk.

Using a vibration crusher for activating standard cement. Trudy
TSNIS MPS no.9:92-101 '53. (MLBA 8:1)
(Cement)

SUPRUNENKO, V.A.; VOLKOV, Ye.D.; REVA, N.I.; SUKHOMLIN, Ye.A.; BURCHENKO,
P.Ya.; RUDNEV, N.I.

Dynamics of pinch in a magnetic field. Zhur. tekhn. fiz. 31 no.10:
1246-1247 0 '61. (MIRA 14:9)

1. Fiziko-tekhnicheskiy institut AN USSR, Khar'kov.
(Magnetic fields)

27167

S/057/61/031/003/007/019
B104/B102

24.6750 also 3117

AUTHORS: Suprunenko, V. A., Sukhomlin, Ye. A., Volkov, Ye. D.,
and Rudnev, N. I.

TITLE: Conductivity of the plasma of a linear pinch

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 9, 1961, 1057-1060

TEXT: The conductivity of a linear hydrogen plasma pinch was studied by means of magnetic probes. The experimental arrangement consisted of a porcelain tube (inside diameter 18 mm, length 42 cm). To reduce the role of the escaping electrons, a potential of -4 kv was applied to the electrodes of the discharge tube. The field strength was varied between 1 and 10 v/cm, the current in the gas was 100 ka. Pre-ionization was achieved by a Penning discharge; a constant magnetic field of up to 1 kilogauss was generated by Helmholtz coils. This magnetic field was simultaneously used as a stabilizing field. The hydrogen pressure in the discharge tube was $1.5 \cdot 10^{-2}$ mm Hg. The condenser battery had a capacity of 15 μ f, and was charged to 30 kv. Discharge was performed with a pulse

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27167

S/057/61/031/009/007/019
B'04/B102

Conductivity of the plasma of a

transformer, the secondary circuit of which comprised the discharge tube. The voltage was reduced by the transformer in the ratios of 1:6 to 1:3. Discharge current and distribution of the magnetic field were measured with different voltages in the discharge tube. The topography of the magnetic field was measured with nine magnetic probes. The signals of these probes were observed with five OK-17M (OK-17M) double-trace oscilloscopes. According to the distribution of H_z and H_ϕ , the authors determined the current density, the electric field strength in the plasma, and the conductivity of the latter. They determined the intensity distribution of the H_γ lines of the Balmer series of hydrogen by a monochromator and a photomultiplier. Besides, they filmed the discharge with a movie camera. They found the density of charged particles in the plasma to be 10^{16} ions/cm³. Fig. 1 shows that the conductivity of the plasma and the time of existence of a pinch decrease with increasing field strength. This behavior of the plasma can be explained by the theory developed by L. Spittser (L. Spitzer) (Fizika pčlnost'yu ionizirovannogo gaza (Physics of the fully ionized gas). IL, p. 97, 1957).

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27167

S/057/61/031/009/007/019
B104/B102

Conductivity of the plasma of a...

Another possible explanation for the found dependence of the electrical conductivity on the electric field is given by considering the interaction of electrons with neutral atoms, which practically always occurs in a discharge. From a certain temperature depending on the degree of ionization of the plasma, the electron interaction with neutral particles is shown to surpass the interaction with ions. The respective critical temperature was estimated to be 30 ev. V. D. Shapiro is mentioned. The authors thank K. D. Sinel'nikov, Academician of the AS UkrSSR, and Ya. B. Faynberg for discussions, as well as N. I. Rev, Degree Student at the Gosudarstvennyy universitet im. Gor'kogo (State University imeni Gor'kiy), for his help. There are 2 figures and 9 references: 4 Soviet and 4 non-Soviet. The two references to English-language publications read as follows: L. C. Burkhardt et al., Nature, 181, 229, 1958; Project Sherwood, Massachusetts, 209, 1958.

ASSOCIATION: Fiziko-tekhnicheskii institut AN USSR Khar'kov
(Physicotechnical Institute AS UkrSSR, Khar'kov)

SUBMITTED: October 10, 1960

Card 3/4

1
3
ACCESSION NR: AT4036051

S/2781/63/000/003/0144/0150

AUTHORS: Suprunenko, V. A.; Faynberg, Ya. B.; Tolok, V. T.; Sukhomlin, Ye. A.; Reva, N. I.; Burchenko, P. Ya.; Rudnev, N. I.; Volkov, Ye. D.

TITLE: Coherent interaction of runaway electrons in a pinch

SOURCE: Konferentsiya po fizike plazmy* i problemam upravlyayemogo termoyadernogo sinteza. 3d, Kharkov, 1962. Fizika plazmy* i problemy* upravlyayemogo termoyadernogo sinteza (Plasma physics and problems of controlled thermonuclear synthesis); doklady* konferentsii, no. 3. Kiev, Izd-vo AN UkrSSR, 1963, 144-150

TOPIC TAGS: plasma pinch, plasma radiation, plasma ion oscillation, plasma electron oscillation, plasma compression, discharge plasma

ABSTRACT: The coherent radiation of transverse electromagnetic waves with frequency close to $\omega_0 (m_e/m_i)^{1/3}$ (ω_0 -- frequency of longi-

Card 1/6₃

ACCESSION NR: AT4036051

tudinal oscillations, m_e -- electron mass, M_i -- ion mass) excited in a plasma by a beam of "runaway electrons," was investigated. The experiments were carried out in a straight tube (alundum, 10 cm dia, 25 cm long) usually filled with hydrogen at 1.3 n/m^2 , through which a 15 F capacitor bank was discharged from 30--40 kV. Preliminary experiments with the setup were reported elsewhere (ZhTF, v. 30, 1057, 1961). In the present experiment the formation of the current of runaway electrons was investigated along with its correlation with the electromagnetic radiation of the plasma; some characteristics of this radiation were also investigated. The measurements have shown that an electron current, with energy equal to the maximum energy, constituted a small fraction of the total runaway electron current, the bulk of the current being due to electrons with energy somewhat higher than thermal but much lower than maximal. Part of the runaway electron beam goes to the development of electrostatic instabilities in the discharge, which give rise to the occurrence of the electromagnetic radiation. The radiation was found to

Card 2/6

ACCESSION NR: AT4036051

be coherent in the entire range of investigated initial gas pressures, with an intensity which is constant practically along the entire discharge length. The frequency of the electromagnetic radiation was found to be close to the plasma frequency and the power to exceed appreciably the power of thermal radiation from the plasma. The transformation of the longitudinal electrostatic oscillations into transverse electromagnetic waves can be attributed to the non-linearity of the oscillations in the plasma due to the large amplitude, and also to boundary effects on the surface of the plasma pinch. Orig. art. has: 5 figures and 3 formulas.

ASSOCIATION: None

SUBMITTED: 00.

DATE ACQ: 21May64

E.I.C.: 03

SUB CODE: ME

NR REF SOV: 006

OTHER: 003

Card 3/6

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26.2321

28778 S/057/61/031/010/011/015
B109/B102

AUTHORS:

Suprunenko, V. A., Volkov, Ye. D., Rova, N. I.,
Sukhomlin, Ye. A., Burchenko, P. Ya., and Rudnev, N. I.

TITLE:

Study of dynamics of a pinch in a magnetic field

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 10, 1961, 1246-1247

TEXT: The behavior of a pinch with respect to $m = 1$ -type instabilities was investigated experimentally. Test arrangement: Discharge tube made of porcelain: Inner diameter 18 cm, length 42 cm, hydrogen filling ($p = 1.5 \cdot 10^{-2}$ mm Hg). Current source: 15-microfarad capacitor. Discharge period: 30 to 60 μ sec. The discharge tube contained nine magnetic probes for determining the H_ϕ and H_z distributions. The measured values were recorded by five synchronized oscilloscopes OK-17M (OK-17M). Distribution of charge, current density, etc., were thus known for any point. Measuring results: The deviation amplitude of the discharge from the axis of the discharge tube is proportional to \sqrt{E} (E - field strength), i. e., proportional to the current density (for measured values see Fig.3). The radial velocity of the discharge, that is also growing linearly with

Card 1/2

Study of dynamics of a...

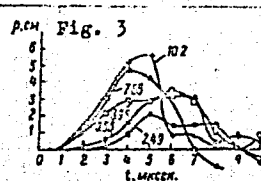
28778 S/057/61/031/010/011/015
B109/B102

Fig. 3 shows the same qualitative behavior. V. D. Shafranov (Sb. "Fizika plazmy", t. 4, str. 130, 1958) is mentioned. There are 5 figures and 3 Soviet references.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR Khar'kov (Physico-technical Institute AS UkrSSR, Khar'kov)

SUBMITTED: January 31, 1961

Fig. 3. Deviation of the discharge from the tube center at different electric field strengths in the plasma. E varies between 10.2 and 2.49 v/cm. Abscissa: time in μsec .



Card 2/2

SUPRUNENKO, V.A.; SUKHOMLIN, Ye.A.; VOLKOV, Ye.D.; RUDNEV, N.I.

Conductivity of plasma in a ~~straight~~-line pinch. Zhur. tekhn.
fiz. 31 no.9:1057-1060 S '61. (MIRA 14:8)

1. Fiziko-tekhnicheskiy institut AN USSR, Khar'kov.
(Plasma(Ionized gases)--Electric properties)

30097
S/057/61/031/011/012/019
B125/B102

26. Y311

AUTHORS: Rudnev, N. I., Suprunenko, V. A., Volkov, Ye. D., and Sukhomlin, Ye. A.

TITLE: Operation of controllable spark dischargers with parallel connection and in a short circuit

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 31, no. 11, 1961, 1344-1349

TEXT: The present paper deals with the construction of a discharger (Fig. 1) and the delay of its wear as a function of the power of the igniting pulse (duration $> 10^{-3}$ sec) for a wide interval of interelectrode voltage. Two graphite-filled hemispheres (radius 60 mm) served as principal electrodes. The spark gap was fed from a battery consisting of ten capacitors. Fig. 2 shows the electric circuit of the spark gap. Its duration of wear Δt consists of the delay Δt_1 between the beginning of the pulse applied and the instant of spark-over on the ignition electrode, and the delay Δt_2 between the spark-over on the ignition electrode and the spark-over between the principal electrodes. Δt , which only depends on

Card 1/43

Operation of controllable spark...

30097
S/057/61/031/011/012/019
B125/B102

the ignition voltage can be made smaller than 10^{-7} sec by a proper choice of the parameters of the ignition pulse. Special attention was paid to a reduction of power losses of the igniting pulse. Strong magnetic fields of great duration were generated by the circuit shown in Fig. 7. The pulses had rather a steep front with weakly sloping back side. The igniting pulse was formed by discharge of a 3-microfarad capacitor at 10+40 kv over an auxiliary spark gap P_3 . The spark gap operates quite accurately in the voltage range investigated. In some experiments on the reduction of inductivity of the bars, each capacitor of the battery has to be connected with the bus bar over a separate spark gap. In this case, the simultaneous response of all spark gaps is important. This is guaranteed by the fact that the igniting pulse reflected from the discharge interval arrives at the collector when the discharge over the other spark gaps has already begun. For dependable operation of the spark gaps with parallel connection, the voltage on the principal electrodes should not differ too much from the static spark-over voltage. Therefore, the interspace between principal electrodes should be quickly and accurately adjustable. There are 10 figures and 5 references: 3 Soviet and 2 non-Soviet. The two references to English-language publications read as

Card 2/43

30097

S/057/61/031/011/012/019
B125/B102

Operation of controllable spark...

follows: J. D. Graggs, M. E. Haine, J. M. Meek, JIEE, 93, 963, 1946;
A. M. Sletten, C. J. Lewis, Proc. IEE, 104, 54, 1957.

ASSOCIATION: Fiziko-tekhnicheskiy institut AN USSR Khar'kov (Physico-
technical Institute of the AS UkrSSR Khar'kov)

SUBMITTED: January 27, 1961

Fig. 1. Discharger.

Fig. 2. Circuit diagram with
ignition circuit.

Fig. 7. Short circuit diagram
("zakorotka").

Fig. 10. Circuit of parallel
connection.

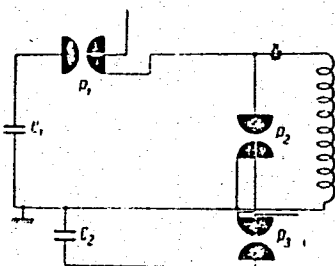


Fig. 7

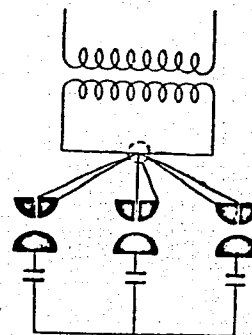


Fig. 10

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